



CLARE

MICRO CHIPS.  
MACRO SOLUTIONS.

XAA170

DUAL POLE OptoMOS® Relay



	XAA170	Units
Load Voltage	350	V
Load Current	100	mA
Max R <sub>ON</sub>	50	Ω

### Description

XAA170 is a 350V, 100mA, 50Ω 2-Form-A relay. It provides an economical solution in applications that are cost driven and component count needs to be minimized.

### Features

- Small 8 Pin DIP Package
- Low Drive Power Requirements (TTL/CMOS Compatible)
- No Moving Parts
- High Reliability
- Arc-Free With No Snubbing Circuits
- 3750V<sub>RMS</sub> Input/Output Isolation
- FCC Compatible
- VDE Compatible
- No EMI/RFI Generation
- Machine Insertable, Wave Solderable
- Current Limiting Surface Mount and Tape & Reel Versions Available

### Applications

- Telecommunications
  - Telecom Switching
  - Tip/Ring Circuits
  - Modem Switching (Laptop, Notebook, Pocket Size)
  - Hookswitch
  - Dial Pulsing
  - Ground Start
  - Ringer Injection
- Instrumentation
  - Multiplexers
  - Data Acquisition
  - Electronic Switching
  - I/O Subsystems
  - Meters (Watt-Hour, Water, Gas)
- Medical Equipment-Patient/Equipment Isolation
- Security
- Aerospace
- Industrial Controls

### Approvals

- UL Recognized: File Number E76270
- CSA Certified: File Number LR 43639-10
- BSI Certified to:
  - BS EN 60950:1992 (BS7002:1992)  
Certificate #: 7344
  - BS EN 41003:1993  
Certificate #: 7344

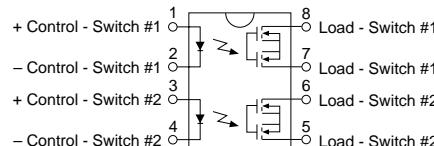
### Ordering Information

Part #	Description
XAA170	8 Pin DIP (50/Tube)
XAA170P	8 Pin Flatpack (50/Tube)
XAA170PTR	8 Pin Flatpack T&R (1000/Reel)
XAA170S	8 Pin Surface Mount (50/Tube)
XAA170STR	8 Pin Surface Mount T&R (1000/Reel)

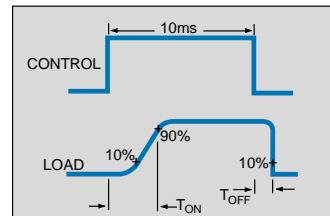
### Pin Configuration

#### XAA170 Pinout

AC/DC Configuration



#### Switching Characteristics of Normally Open (Form A) Devices



**Absolute Maximum Ratings (@ 25° C)**

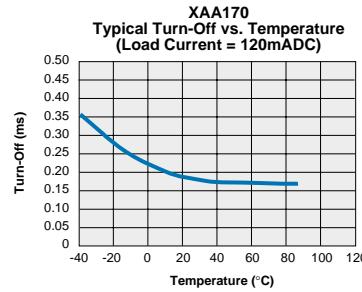
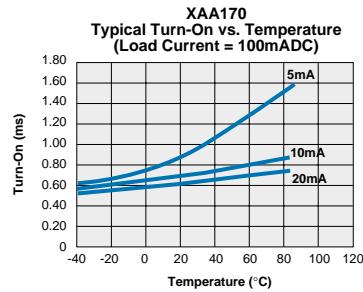
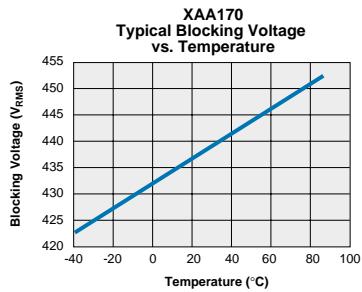
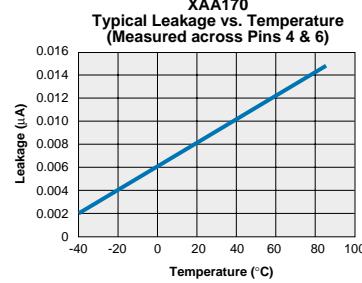
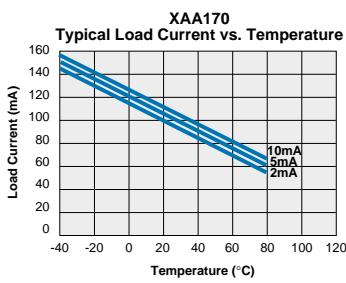
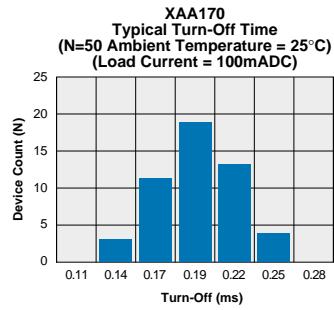
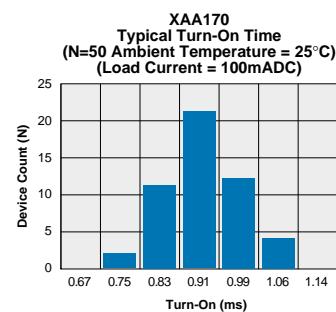
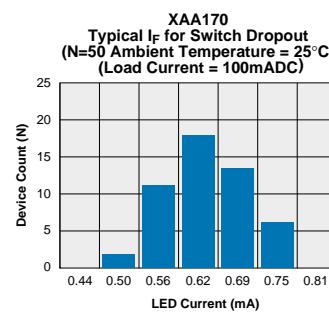
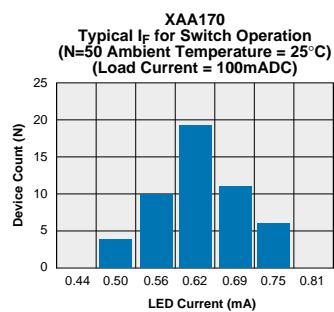
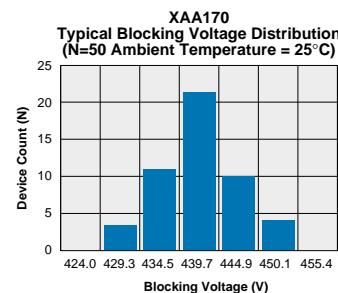
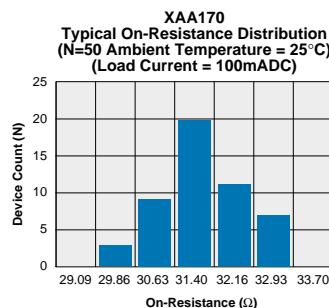
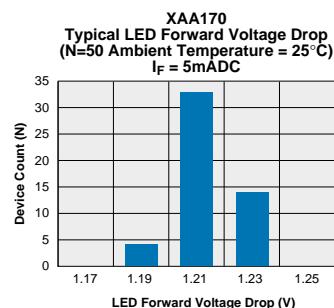
Parameter	Min	Typ	Max	Units
Input Power Dissipation	-	-	150 <sup>1</sup>	mW
Input Control Current Peak (10ms)	-	-	50 1	mA A
Reverse Input Voltage	-	-	5	V
Total Power Dissipation	-	-	800 <sup>2</sup>	mW
Isolation Voltage Input to Output	3750	-	-	$V_{RMS}$
Operational Temperature	-40	-	+85	°C
Storage Temperature	-40	-	+125	°C
Soldering Temperature DIP Package	-	-	+260	°C
Flatpack/Surface Mount Package (10 Seconds Max.)	-	-	+220	°C

<sup>1</sup> Derate Linearly 1.33 mw/°C<sup>2</sup> Derate Linearly 6.67 mw/°C

*Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device to the absolute maximum ratings for an extended period may degrade the device and effect its reliability.*

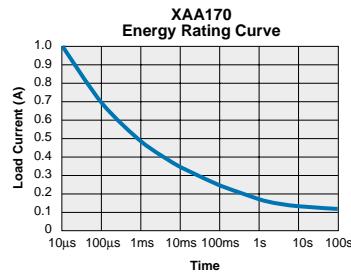
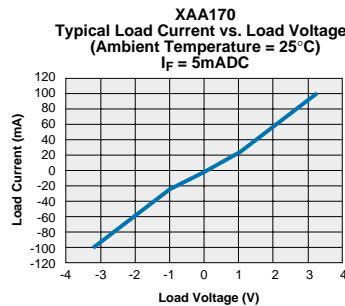
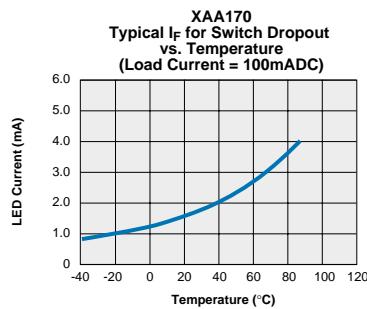
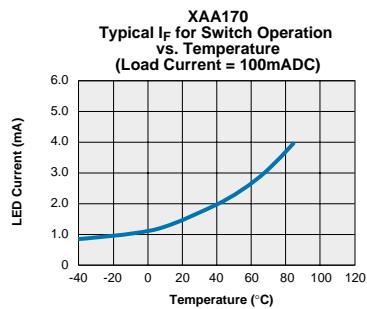
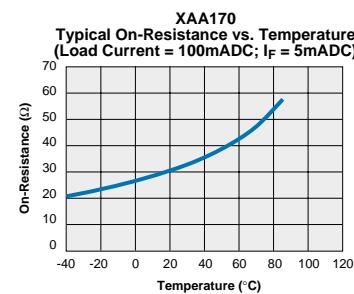
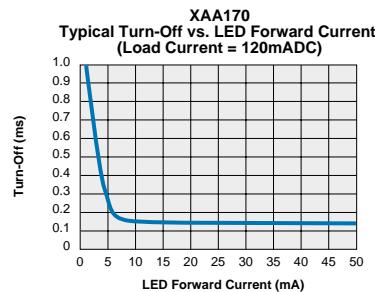
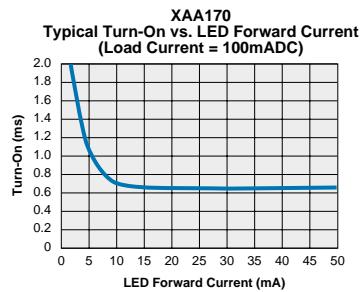
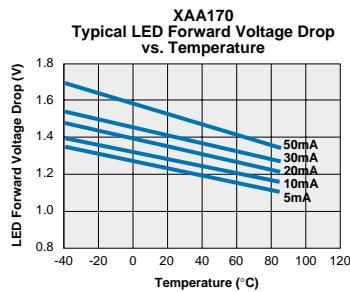
**Electrical Characteristics**

Parameter	Conditions	Symbol	Min	Typ	Max	Units
<b>Output Characteristics @ 25°C</b>						
Load Voltage (Peak)	-	$V_L$	-	-	350	V
Load Current (Continuous)	-	$I_L$	-	-	100	mA
AC/DC Configuration						
Peak Load Current	10ms max	$I_{LPK}$	-	-	350	mA
On-Resistance						
AC/DC Configuration	$I_L=120mA$	$R_{ON}$	-	33	50	Ω
Off-State Leakage Current	$V_L=350V$	$I_{LEAK}$	-	-	1	μA
Switching Speeds						
Turn-On	$I_F=5mA, V_L=10V$	$T_{ON}$	-	-	5	ms
Turn-Off	$I_F=5mA, V_L=10V$	$T_{OFF}$	-	-	5	ms
Output Capacitance	50V; f=1MHz	$C_{OUT}$	-	25	-	pF
Load Current Limiting		$I_{CL}$	-	-	-	mA
Capacitance						
Input to Output	-	-	-	3	-	pF
<b>Input Characteristics @ 25°C</b>						
Input Control Current	$I_L=120mA$	$I_F$	5	-	50	mA
Input Dropout Current	-	-	0.4	0.7	-	mA
Input Voltage Drop	$I_F=5mA$	$V_F$	0.9	1.2	1.4	V
Reverse Input Voltage	-	$V_R$	-	-	5	V
Reverse Input Current	$V_r=5V$	$I_R$	-	-	10	μA
Input to Output Capacitance	-	$C_{I/O}$	-	3	-	pF
Input to Output Isolation	-	$V_{I/O}$	3750	-	-	$V_{RMS}$

**PERFORMANCE DATA\***


The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

## PERFORMANCE DATA\*

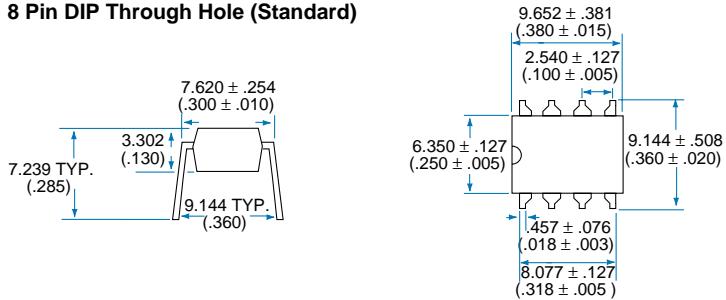


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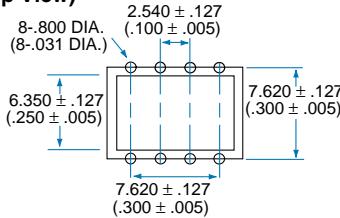


### Mechanical Dimensions

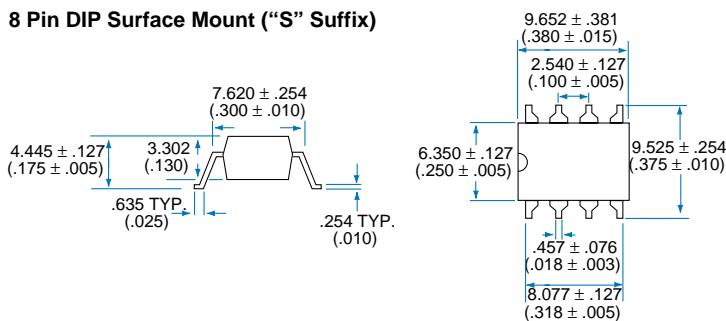
#### 8 Pin DIP Through Hole (Standard)



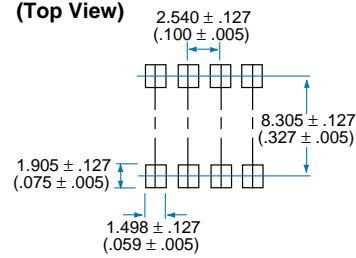
#### PC Board Pattern (Top View)



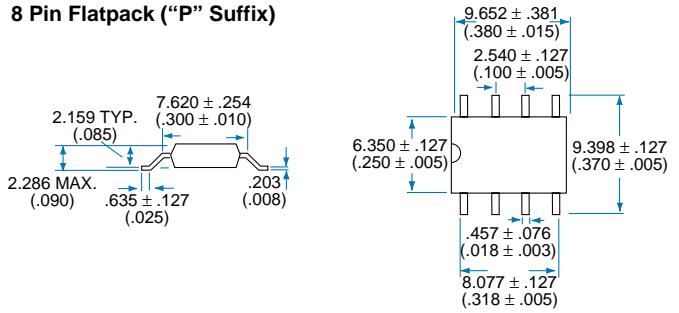
#### 8 Pin DIP Surface Mount ("S" Suffix)



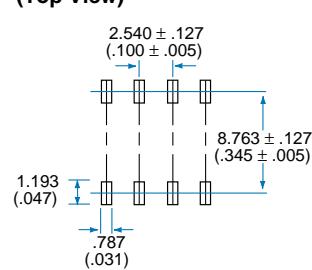
#### PC Board Pattern (Top View)



#### 8 Pin Flatpack ("P" Suffix)



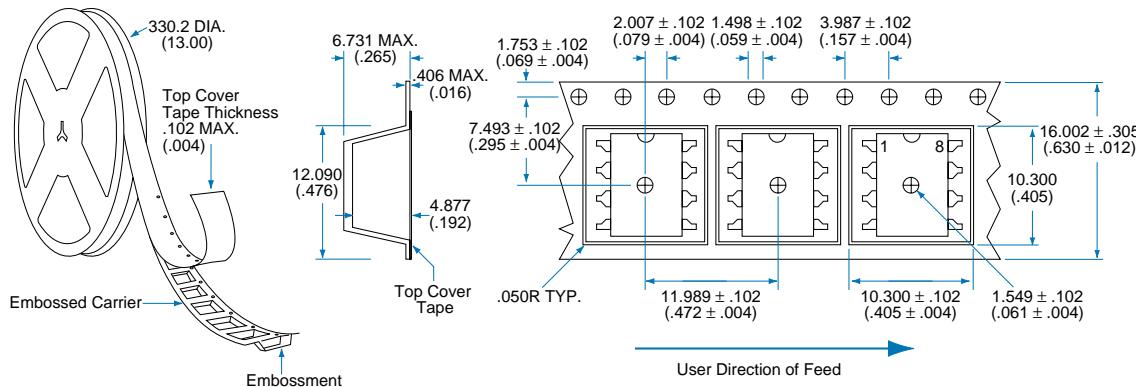
#### PC Board Pattern (Top View)



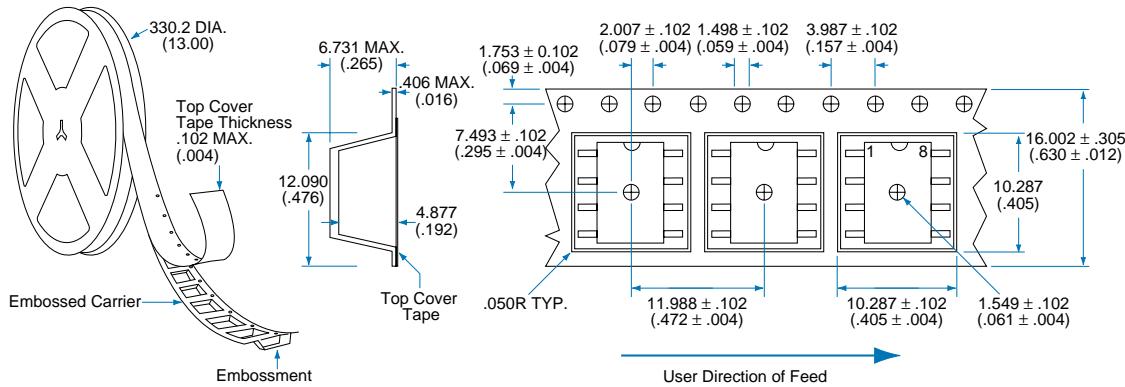
Dimensions  
mm  
(inches)

### Mechanical Dimensions

#### Tape and Reel Packaging for 8 Pin Surface Mount Package



#### Tape and Reel Packaging for 8 Pin Flatpack Package



Dimensions  
mm  
(inches)

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